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ABSTRACT

The production of non-narrative information (descriptive versus expository) across written and oral modes was examined for second-, fourth-, and sixth-grade Greek elementary school students. Written and oral protocols were taken from a total of 240 students at each of 3 grades and evaluated according to: (1) the size of the text produced, measured in the number of idea units produced; and (2) the thematic content of the idea units produced. Results showed a significant increase in the size of written texts produced for both expository and descriptive information between second- and fourth-grade students, and second- and sixth-grade students, but not between fourth- and sixth-grade students. However, such patterns were not revealed for oral protocols. In terms of descriptive information, grade and mode had a significant effect on the total number of idea units produced and the amount of thematically relevant and thematically irrelevant descriptive ideas units produced. In terms of expository information, grade had a significant effect on the total number of expository idea units produced, grade and mode had a significant effect on the amount of thematically relevant expository idea units produced, and the amount of irrelevant expository idea units produced. The lack of significant differences across grades in oral modes may be due to the formal educational programs that stress development and refinement of written skills as opposed to oral skil . Findings also suggest that developmental progression in skills may reach an equilibrium between grades four and six. (Contains six figures of data.) (Author/RS)

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Written and Oral Production of Non-Narrative Information in Greek Elementary School Students

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Abstract

The production of non-narrative information (descriptive vs. expository) across written and oral modes was examined for 2nd, 4th, and 6th grade Greek elementary school students. Written and oral protocols were taken from students at each of the 3 grades and evaluated according to: (a) the size of the text produced, measured in the number of idea units produced, and (b) the thematic content of the idea units produced. Results showed a significant increase in the size of written texts produced for both expository and descriptive information between 2nd and 4th grade students, and 2nd and 6th grade students, but not between 4th and 6th grade students. However, such patterns were not revealed for oral protocols. In terms of descriptive information, grade and mode had a significant effect on the total number of idea units produced and the amount of thematically relevant and thematically irrelevant descriptive idea units produced. In terms of expository information, grade had a significant effect on the total number of expository idea units produced, grade and mode had a significant effect on the amount of thematically relevant expository idea units produced, and the amount of irrelevant expository idea units produced. Discussion considers the implications of these findings.

Written and Oral Production of Non-Narrative Information in Greek Elementary School Students

Several studies have investigated the role of the nature of information in text generation of elementary school students. Information may be of various types such as descriptive, narrative, or expository (DeGoes & Warden, 1989), having its own structural properties, thus requiring individuals to plan their written and oral texts accordingly (Kress, 1982). For example, a text with a descriptive theme (e.g., 'my home') will focus on the features of my home, its location in relationship to some points of reference ('how far it is from my school'), its qualities ('it is cosy, warm') among other things. On the other hand, a text with an expository theme (e.g., 'the game of soccer') will focus on facts about soccer, comparison with other team sports, and definitions of soccer terms.

Among the research examining children's production of various types of information, Garner and her associates (1986) examined children's knowledge of the properties of expository texts. Children in grades 3, 5, and 7 were asked to identify paragraphs, to form written paragraphs with sentences selected from a set of related and unrelated sentences, and to arrange sentences cohesively within paragraphs. Results showed that although nearly all students could identify a paragraph, only older students could fill paragraphs with thematically related sentences and arrange them cohesively.

Evans and Rubin (1983) also looked at information production among elementary school students. Children in kindergarten and in grades 1, 4, and 8 were asked to orally explain the rules of common games they play (i.e., to provide expository information). Evans and Rubin found that children of all ages were able to provide several rules, however, older children provided more

information than younger children. Younger children produced information that focused on certain actions of the games in question, such as '...central actions of the players in their roles and tended to omit information concerning the various preparations for a game and how it draws to a conclusion or a winner.' (Evans & Rubin, 1983, p .1565) In addition, young children were more egocentric in their responses, providing information that was more personally relevant.

In a similar study DeGoes and Warden (1989) asked students at grades 1, 3, 5, and 7 to describe what they saw in a picture where two girls were playing at a swing (descriptive information), and what they knew about fish (expository information), when a picture of fish was presented to them. The results indicated that students in higher grades not only wrote longer texts but their texts were more cohesive and topic related with fewer incidents of personal and irrelevant accounts than the texts of younger students.

The studies cited above suggest that older students should not only produce more expository and descriptive information across oral and written modes of text production, but that information produced by older students should be more relevant to a given topic rather than personally relevant. However, the studies discussed above were based largely on students for whom English is the native language. Furthermore, those studies do not make comparisons among oral and written modes of text generation in terms of the amount and type of information produced. The current study examined the production of non-narrative information across written and oral modes for 2nd, 4th, and 6th grade Greek elementary school students. This examination allows for some tentative contrasts between findings obtained among culturally and linguistically diverse populations. In addition, this is a seminal study of

non-narrative information production among a sample of Greek elementary school students.

Previous studies of information production of school children suggest several types of analyses which were conducted:

1. examination of differences in the total number of expository and descriptive idea units produced across oral and written modes for students in the 2nd, 4th, and 6th grades,

2. examination of differences in the amount of thematically relevant idea units (descriptive and expository) produced across grades and modes, and

3. examination of differences in the amount of thematically irrelevant idea units (descriptive and expository) produced across grades and modes.

Method

Subjects.

Two hundred and forty (240) male and female, 2nd (n=80), 4th (n=80), and 6th (n=80) grade students from elementary schools located in Patras, Greece participated in this study. One half of each grade sample (n=40) were randomly assigned to a written text mode production condition (n=120) and the other half of each grade sample (n=40) were randomly assigned to an oral text mode production condition (n=120). In the written text mode condition students were required to provide written responses to questions while in the oral text mode condition students were required to verbally respond to the examiner's questions.

Materials

Two black and white pictures were used, one for each type of information condition. The picture used for the descriptive information

condition was taken from a book of children's literature and depicted children engaging in a game of jumprope. The picture used for the **expository information condition** depicted several birds in a naturalistic setting.

Procedure

Within oral and written mode conditions, students at all grades were shown both photographs and were required to provide the appropriate descriptive or expository information. The order in which descriptive and expository information was elicited was random. In the written mode condition, students were tested in a group setting in their classrooms on two separate days, one day on descriptive information the second on expository. In the oral mode condition, students were individually interviewed and interviews were recorded on tape. All testing was conducted by the principal investigator. Given that there were no time constraints in the written mode condition, oral interviews ended after each student was asked three times if there was something else she/he wanted to add (describe or recall) after indicating that she/he was finished.

In the procedures used for eliciting descriptive information, students were given a copy of the black and white picture depicting a group of children playing jump rope and were instructed to describe the picture as best as they could. Students were alerted not to give a narrative account related to the picture. In the procedures used for eliciting expository information, students were instructed to recall everything they knew about the topic of "birds", and to use the provided picture as an aid. Students were also cautioned not to describe the picture.

Scoring

Written and orally produced texts were scored on the basis of their size

and content. The size of texts was assessed according to the **total number of idea units produced**, defined as a 'proposition or set of propositions identifiable as an independent component in the sequence of the content' (DeGoes & Warden, 1989, p. 6). **Content of protocols** was assessed on the basis of information-specific (i.e., descriptive and expository) thematic categories. Thematic categories were derived from the classification developed by Degoes & Warden (1989). Thematic categories for descriptive information were:

1. Identification of components: i.e., "There is a child in the picture."
2. Localization of components: i.e., "The children are in a garden."
3. Characterization of components: i.e., "The boy wears a shirt."
4. Characterization of movements: i.e., "The girl is jumping."
5. Supposition: i.e., "I think it's spring."
6. Interpretation: i.e., "The children look nice."
7. Imaginative construction: i.e., "They must be brothers and sisters."

The first four types of descriptive categories refer to factual information specific to the topic, while comparatively, the last three categories of information reflect more topic-irrelevant information. Thematic categories for expository information were:

1. Naming: i.e., "Eagles are birds."
2. Attribution: i.e., "Birds have feathers."
3. Description of behavior: i.e., "Birds lay eggs."
4. Reference to associated notion: i.e., "Some people hunt birds."
5. Expression of personal content: i.e., "I have a pet parrot."

The first four types of expository thematic categories refer to topic-relevant information, while comparatively, the last thematic category reflects more topic-irrelevant information.

Previous research cited here suggests differences in the overall amount of text produced across grades, therefore, the number of idea units per thematic category were entered into analyses as proportions of the total number of idea units produced. For example, if a student had produced 5 "supposition" idea units and the total number of descriptive idea units produced by the student was 20, the value for "supposition" idea units entered into analyses would be .25. In order to examine hypotheses regarding differences between the amount of thematic relevant and thematic irrelevant idea units produced, thematic categories were combined in the following way: **Expository thematically relevant** idea units were derived from the combination of expository thematic categories 1, 2, 3, and 4 just listed. **Descriptive thematically relevant** idea units were derived from the combination of descriptive thematic categories 1, 2, 3, and 4 just listed. The combination of the remaining descriptive thematic categories (5, 6, and 7) comprised the **descriptive thematically irrelevant** idea units, and the remaining expository thematic category (5) comprised the **expository thematically irrelevant** idea units. All scoring procedures were carried out by two skilled raters who reached perfect agreement regarding the assignment of idea units to thematic categories.

Results

Total Descriptive Idea Units Produced

The total number of descriptive idea units (TDIU) produced differed significantly across grades $F_{2,234} = 25.05, p < .0001$, and modes of production

$F_{1,234} = 39.29, p < .0001$. These main effects were qualified by a significant interaction $F_{2,234} = 18.72, p < .0001$. This result is depicted in Figure 1.

Results from apriori hypothesis tests indicate that 4th grade students $F_{1,234} = 68.12, p < .0001$, and 6th grade students, $F_{1,234} = 59.97, p < .0001$, produced significantly more descriptive idea units than did 2nd grade students in written modes. No other relevant significant effects were observed.

Total Expository Idea Units Produced

The total number of expository idea units (TEIU) produced differed significantly across 2nd, 4th, and 6th grade students, $F_{2,234} = 21.87, p < .0001$. Although the total number of expository units produced did not vary significantly across production modes, $F_{1,234} = 1.70, p < .20$, a significant interaction between grade and mode was obtained, $F_{2,234} = 9.27, p < .0001$. This pattern is illustrated in Figure 2.

Similar to the results found for the TDIU, the results of apriori hypothesis tests indicate that 4th grade students $F_{1,234} = 36.61, p < .0001$, and 6th grade students $F_{1,234} = 47.93, p < .0001$ produced significantly more EIU than did second grade students in written modes. No other significant effects were obtained.

Thematically Relevant Information Produced

The proportion of thematically relevant descriptive information (TRDI) differed significantly across grades, $F_{2,234} = 8.49, p < .0003$ and modes of production $F_{1,234} = 20.53, p < .0001$. A significant interaction between grade and mode was observed, $F_{2,234} = 7.08, p < .001$. This result is depicted in Figure 3.

Apriori hypothesis tests revealed that 4th grade students,

$F_{1,234} = 21.76, p < .0001$ and 6th grade students, $F_{1,234} = 21.40, p < .0001$, produced significantly more TRDI in written modes than did 2nd grade students. These results were the only significant effects obtained.

Significant differences in the total proportion of thematically relevant expository information (TREI) produced were observed across grades $F_{2,234} = 9.54, p < .0001$, and modes of production, $F_{1,234} = 22.94, p < .0001$. See Figure 4 for the depiction of these main effects. Interaction between grade and mode for TREI was not significant, $F_{2,234} = 1.18, p < .3103$.

Results of apriori tests demonstrated a significant difference between 2nd and 6th grade students in the total TREI produced in written modes, $F_{1,234} = 17.10, p < .0001$ and in oral modes, $F_{1,234} = 3.88, p < .05$. No other significant effects were observed.

Thematically Irrelevant Information Produced

The total proportion of thematically irrelevant descriptive information (TIDI) produced, differed significantly across grades, $F_{2,234} = 9.44, p < .0001$, and modes of production, $F_{1,234} = 29.21, p < .0001$. However, these effects were qualified by a significant interaction, $F_{1,234} = 7.86, p < .0001$. This interaction is depicted in Figure 5.

Results of the apriori hypothesis tests indicated that 4th grade students, $F_{1,234} = 26.03, p < .0001$, and 6th grade students $F_{1,234} = 24.32, p < .0001$ produced significantly more TIDI in written modes than 2nd grade students produced. Analyses did not reveal any other relevant significant differences.

The total proportion of thematically irrelevant expository information (TIEI) produced, differed significantly across grades $F_{2,234} = 9.41, p < .0001$ and modes $F_{1,234} = 23.13, p < .0001$. This result is illustrated in figure 6. Results from the apriori hypothesis tests indicate that 4th grade students

$F_{1,234} = 7.20, p < .0078$ and 6th grade students $F_{1,234} = 17017, p < .0001$ produce significantly, (proportionately) less irrelevant expository information than 2nd grade students in written modes. No other significant differences were revealed.

Discussion

With regard to the total number of expository and descriptive idea units produced by Greek elementary school students, the patterns obtained here converge only in part with findings from studies obtained with non-Greek samples. The number of idea units produced, differed significantly between older and younger students in written modes. Nonetheless, increases in the total number of expository and descriptive idea units produced were revealed only between 2nd and 4th grade students and 2nd and 6th grade students in written modes, but not between 4th and 6th grade students. Significant differences in the total number of expository and descriptive idea units were not obtained in the oral conditions at any grade. This finding is not in accord with findings obtained with non-Greek samples.

Similar results were found with the other dependent measures. Significant differences between 2nd and 4th grade students and 2nd and 6th grade students in the proportion of thematically relevant descriptive idea units produced in written modes coincide with the findings from non-Greek samples. However, the absence of significant differences across grades in the oral mode does not coincide with hypotheses derived from other studies. The finding that the proportionate amount of thematically relevant expository information differs significantly across both grades and modes, was expected on the basis of previous research. However, it is not clear that the result indicating

significant differences between only 2nd and 6th grade samples coincides with expectations based on previous research in this area.

The results indicating that 4th and 6th grade students produce more thematically irrelevant descriptive information than 2nd grade students, in written mode, contradicts patterns obtained in previous research. However, the findings that 4th and 6th grade students produce proportionately less thematically irrelevant expository information converges with patterns obtained in previous research.

Overall, several general conclusions can be drawn from the current results. First, students at all grade levels do not differ with regard to the total number or proportionate number of descriptive or expository idea units they produce in oral modes, however, relatively consistent differences in the total number versus the proportionate number of descriptive idea units are shown across grades in written modes. Second, significant differences in information production are not found between 4th and 6th grade students but are rather consistently revealed between 2nd and 4th grade students and 2nd and 6th grade students. And third, as students advance in grade they produce more information across information types (i.e, totals, thematically relevant and thematically irrelevant).

In terms of gaining a preliminary understanding of these general conclusions, the lack of significant differences across grades in oral modes (and the consistent significant effects found in written modes) could be explained by the fact that formal educational programs in school may stress the development and subsequent refinement of written skills as opposed to oral skills. Therefore, differences in the skills that are emphasized and perhaps, refined, as compared to those that may not be emphasized would be expected

across grades. This implies that grade differences on some performance tasks may not necessarily be expected if an educational program is not focused on that particular task.

The fact that significant differences in information production did not emerge between 4th and 6th grade students but rather between 2nd and 4th grade students and 2nd and 6th grade students, suggests that developmental progressions in skills reaches a sort of *equilibrium* between grades 4 and 6. It is plausible to consider that given that students between grades 2 and 4 comparatively receive more new skill instruction than students in grades 4 and 6, students in higher grades (4 through 6) may experience a type of ceiling effect in terms of the benefit achieved from particular types of continued skill development.

Finally, tendencies for information production to increase as students advance in grade, across information types, suggests that these effects may be due to the fact that as students progress in grade they simply acquire more information, therefore they have more information to contribute. This possibility implies that it is not the type of information (i.e., expository vs. descriptive) that is most important rather it is simply the grade of the student. While, a stronger case can be made for this point for descriptive information, the results obtained with expository information production do not fully support this contention. For example, although older students produced significantly more total expository idea units and total proportions of thematically relevant expository idea units than younger students, older students produced significantly less thematically irrelevant idea units than younger students. These patterns suggest that older students are not necessarily simply producing more information, but rather have acquired skills

that enable them to produce *more or less* of the type of information requested.

In sum, the results obtained with this Greek sample do not fully converge with results obtained from non-Greek samples. Characteristics of the Greek education system and/or culture, not found in non-Greek samples, may fundamentally account for these differences. In addition, methodological variations in the scoring procedures or the conceptualization of some dependent measures must be acknowledged when interpreting the results presented here. Nonetheless, the results presented here may provide important information about the development of written and oral skills with regard to non-narrative information production. If indeed differences in non-narrative information production vary so consistently (i.e., in written modes and oral modes) due to the emphasis or lack of emphasis in a particular educational program, this provides important information regarding plausible interventions or enhancements in programs. Considering that there appears to be a strong emphasis on the development of written skills across the entire range of the American educational system (i.e., K through college and beyond) additional research in this topic area is warranted.

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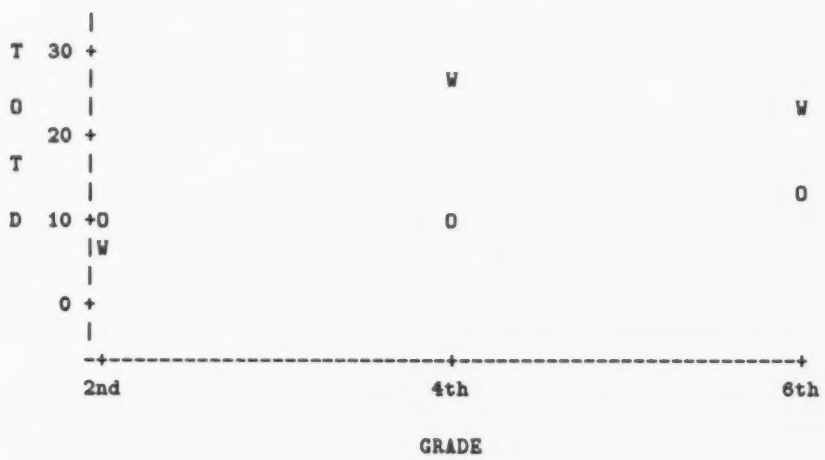
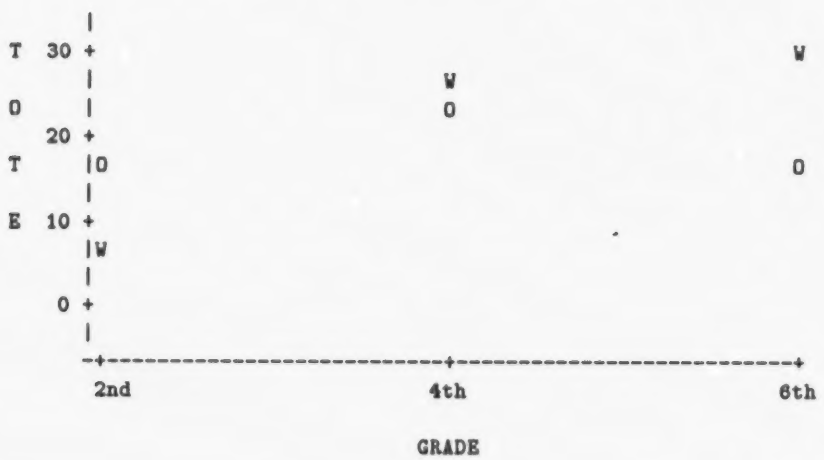
Figure 1. Mean Total Descriptive Idea Units Per Grade and Mode.



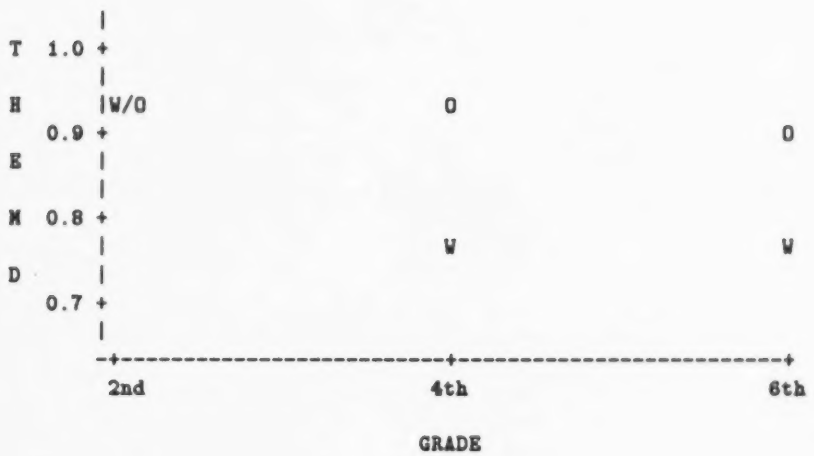
TOTD = Mean total descriptive idea units
W = Written mode of text production
O = Oral mode of text production

Figure 2. Mean Total Expository Idea Units Per Grade and Mode.



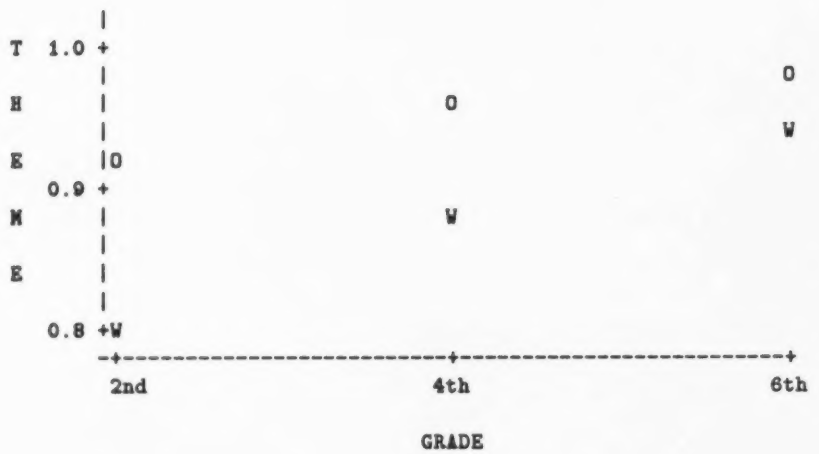
TOTE = Mean total expository idea units

Figure 3. Mean Thematically Relevant Descriptive Idea Units Per Grade and Mode.



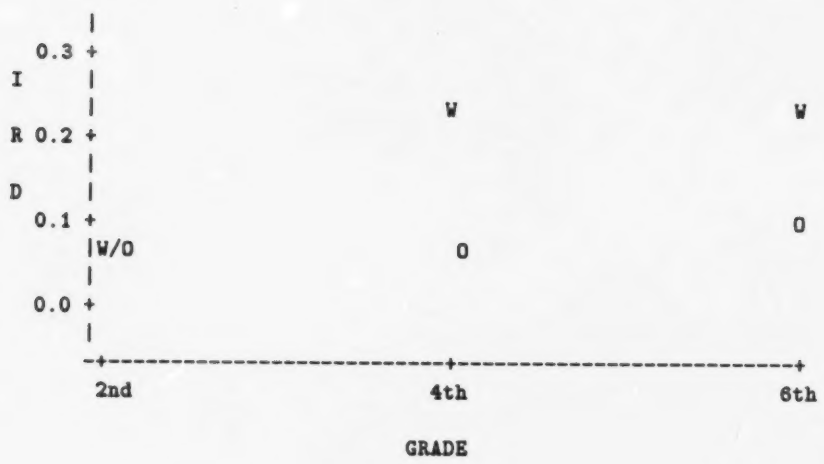
THEMD = Mean thematically relevant descriptive idea units

Figure 4. Mean Thematically Relevant Expository Idea Units Per Grade and Mode.



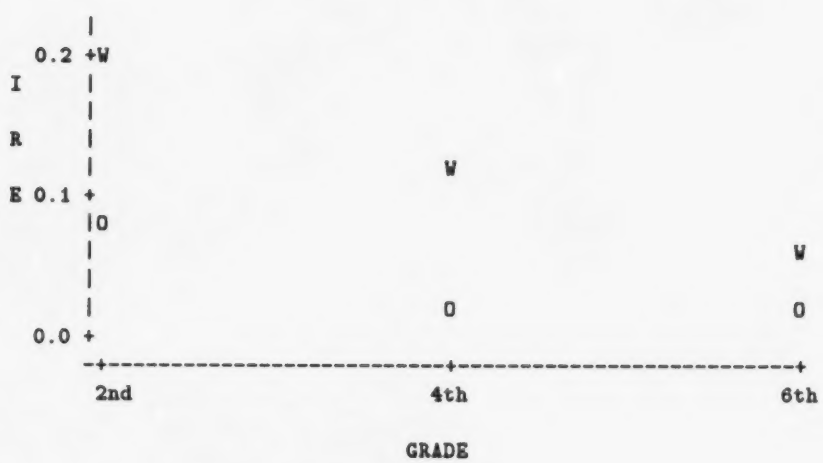
THEME = Mean thematically relevant expository idea units

Figure 5. Mean Irrelevant Descriptive Idea Units Per Grade and Mode.



IRD = Mean thematically irrelevant descriptive idea units

Figure 6. Mean Thematically Irrelevant Expository Idea Units Per Grade and Mode.



IRE = Mean thematically irrelevant expository idea units.